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THE MOST POPULAR OF PERIODICALS.

THE topic of almanacs, we are aware, is one upon which the British public will not allow any trifling. Englishmen, generation after generation, religiously perform the rite of annual purchase with a punctuality which, in other cases, might almost be termed superstitious. Altogether, it is a solemnity which on no account ought to be made light of. It shall not be by us. We are ourselves too strict devotees on the point for that; and, indeed, he would be a very bold man who should attempt to discredit this high national institution. The mere shaking of the leaves of all the almanacs in the hands of the people would whiffle a sceptic off his legs in a breeze of indignation; or a bit torn off each cover corner, and dropped upon the unbeliever, would bury him underneath a mountain of party-coloured paper. Persons talk of popular authors, but what is Dickens to Old Moore? We are not setting up as critics. Anything which might otherwise seem like an insinuation of irrelevance or unintelligibility in the contents of these most popular of periodicals, must be taken simply as a confession of our own individual ignorance. In all the cases where it might appear that a wish for change was implied, it must be distinctly understood that we are lamenting our own imperfect tastes.

The first thing which strikes one in glancing over any almanac is the very liberal estimate formed by the compilers of the social position of the average Englishman. We will give a specimen or two of the consequent wide range of information which it seems to be thought he is most likely daily to need. It would be an unpardonable omission, for instance, in any almanac above the price of a penny, if it neglected to apprise me of the exact amount of taxes I should be expected to pay in case of my coming to a sudden determination to keep a pack of hunting-hounds. I find that I should not be allowed to provide myself with sixty-six, 'or more,' of these dogs without becoming liable to the state for just L.39, 12s. 0d. annually. Now, this is very satis-

factory information to know, and must be highly useful to the common people, since it prevents persons from loosely collecting five or six dozens of dogs about them without being aware of all it involves. But tastes in reference to dogs are notoriously known to differ, and a man who did not care much for fox-hounds might have a fancy for some other species. The almanacs, again, are careful on this point, and individuals in general must be thankful for the further information that if they prefer greyhounds, still they are not at full liberty to entertain the notion of keeping more than fourteen at a time. Anybody who possesses fifteen or more greyhounds will receive a call from the tax-collector for L.9. Another piece of intelligence uniformly given under this heading must be of very common utility; we mean the intimation that for wearing or using hair-powder you render yourselves liable to a duty of L.1, 3s. 6d. It is evident, too, that it is a happy thought to include in almanacs the amount of the tax you will have to pay on a four-wheel carriage drawn by two or more horses; and also what is the precise assessment on such of your gardeners as you may occasionally employ as under-gamekeepers. There must be so many people who would go wrong, if this kind of information were not made common. The scale, too, on which the inevitable interest tables are calculated is very satisfactory, and it must give foreigners a very proper notion of the wealth of this country. Persons in the cottage-homes of England, it seems, are continually handing down the penny almanac to see how much the interest on a thousand pounds comes to at four, five, and six per cent. It is, again, highly suggestive that everybody should require, as it appears they do, the fullest information as to the stamps to be affixed on foreign and inland bills. The general public, in drawing foreign bills in sets of three or more, might make sad blunders, but for its being set down in these books, which lie at everybody's elbow, that on every bill of each set must be put a stamp, value thirteen shillings and fourpence. It adds, also, to one's sense of self-importance to see such carefulness in reminding one of when

dividends are due at the Bank of England, and also of the dates upon which holidays are kept at the Exchequer. Imagine the fruitless calls the inhabitants of our provincial towns, villages, and hamlets might make, if it were not so widely circulated when the Exchequer department would be closed!

We turn now to the calendar, and if we have been previously struck with the generous assumption made of one's social standing, we find ourselves still further honoured by the deep and recondite learning with which the general public is accredited. Who, for instance, but a people deeply read in history could be supposed to care much for the reminder conspicuously put against the 4th of March in one of the almanacs now before me, that it was on that day in the year 1306 we made peace with Bruce? I also find from another calendar, that the most important event connected with the 10th of May is that it was on that day in 1405 that the battle of Monmouth was fought. No doubt, there are large numbers of persons who keep up that anniversary, and who must not be allowed to forget the exact date. Then, again, it is obviously of great importance that the popular recollection should be kept alive of its being on the 6th of October that Malcolm was murdered by Macbeth. The year sounds a little distant—it was in 1093—but it is not the fault of the almanac if nothing fresh has happened lately on the 6th day of October. The fact that it was on the 15th of January (1784) that the Asiatic Society was founded appears to several compilers very important to be known. In one of our highest-priced almanacs, Bishop Lambert and the 17th of September go together. Space is not unnecessarily occupied in stating any particulars about Bishop Lambert; everybody is complimentarily credited with the possession of that information; all that is needed is, in connection with that date, to put down the abbreviated sentence 'Bp. Lambert,' and no doubt a flood of recollection pours upon the public mind. Another calendar apprises us that the 6th of October is lastingly memorable for the capture of Manila, which unprecedented feat, we learn, was achieved on that day in 1762. General readers, too, throughout England, Wales, and Ireland, as well as in Scotland, are supposed to be much interested in knowing that it is on the 12th of September that the North Tweed fisheries close.

According to one record, we find that nothing has occurred on the 18th of July since the year 1333 to equal in significance the battle of Berwick. Crowds of persons, it is suggested by another almanac, are anxiously on the look-out, year by year, for the precise day on which Dr Desaguliers died, and the event is carefully stated to have happened on the 28th of February 1744. It does not need dwelling on how highly necessary it is that we should be reminded that it was on the 2d of June (1717) that Rob Roy surrendered. But one of our almanacs, of a slightly agricultural turn, has hit upon an entertaining way of making dates do double service. For example, it couples historical occurrences and natural events in this fashion: 6th April, *Cœur-de-Lion* died—the raspberry flowers; 3d July, Constantinople founded—the sow thistle is ripe; 7th July, Sheridan died—Jupiter souths 10 h.; 27th March, Bruce crowned—the gooseberry flowers. So the record runs on, the burning of the Savoy Palace

being associated with the ripening of the mistletoe, the death of Sir James Outram with the budding of the coltsfoot, the establishment of the Ratcliffe Library with the appearance of cherries; Napoleon's abdication (in 1814) with the flowering of the ash; the arrival of Captain Cook at Botany Bay with the bursting forth of the beech-tree in this country. Even the commencement and close of each legal term is in this way pleasantly coupled with rustic matters. The end of Hilary is touchingly associated with snow-drops; and the opening of the Easter Term is marked as having some connection with the appearance of the plover.

Laying aside this particular almanac, the compiler of which so specially distinguishes himself from the bulk, a further remark suggests itself with reference to the calendars generally—namely, that in selecting those upon whom the fame of being mentioned in connection with certain dates is to be conferred, the writers are highly original, and do not by any means tamely follow the lead of the duller historians who chronicle affairs *in extenso*. It does you good to see how carefully they preserve the date of Prior's birth, whom they seem, by the exercise of their independent judgment, to consider our most conspicuous poet. One of them, I notice, is very tenacious of the memory of Francis Grose, who died on the 12th of May 1791; and another directs attention to the never-to-be-forgotten fact that Captain Manby was born on the 28th of November 1765. They are all great admirers, too, of Sir G. Kneller. Still, it must not be thought from these instances of conservatism in holding on to traditions of the past, that the compilers are not ready to recognise later merit, when it is clearly made out. We notice that a prominent niche has, in one case, been given to Alexis Soyer, of culinary fame, and another to a bearer of the household name of Wombwell. The memorandum, in the latter case, is made with unadorned simplicity, just as we have written it, but there can be little chance of mistake as to who is meant; it must be our old friend of the travelling caravans, who has become a lion after death, by virtue of his having kept so many in his lifetime.

But speaking more generally of the contents of our almanacs, we cannot but allude to the remarkable attention which is invariably paid to the moon. The stars, fixed and otherwise, are not wholly neglected; chief notice is, however, always given to her lunar ladyship. It is to be inferred from the minute details so religiously supplied, that the population of these islands is perpetually on the look-out for information as to the moon's changes. We might, indeed, be Hebrews who kept festivals in celebration of all full moons, with minor rejoicings at every progressive quarter. Some almanacs give us the precise declination of the moon at each midnight, intelligence which it is to be hoped those of us who are out at that hour are always in a condition to bring into use, by way of correcting the extraordinary lunar phenomena which are so frequently observed about that time, but respecting which professional astronomers are so sceptical. One or two of the almanacs before us even go into the question of the moon's angular distance, at the short periods of every three hours or so, from the centre of certain stars; which are very lively calculations, and are doubtless in great request, and very generally useful. It is also carefully intimated that, at specified

sensons, Mercury rises about two hours before the sun, and that Jupiter, now and then, is a brilliant star at one o'clock in the morning.

Again, all the almanacs are nervously anxious about Greenwich mean time, to which great importance seems to be attached; in some instances, they even take pains to translate it into what is rather equivocally called civil mean time. We also notice that the inhabitants of the country generally appear to be very sensitive on the score of the exact moment at which it is high water and low water at London Bridge. Why this should be, we do not profess wholly to understand. Almanacs, we are content to feel, are mysteries, and must be implicitly accepted as such, in a proper spirit of unquestioning reliance. If we allowed curiosity to become too daring, we might go on and on till we were led impiously to speculate as to who are their compilers; what high-priests of literature they be to whom this power of awarding fame and deciding what is the most necessary information is conceded; we might ask whether it is true that they are the retired Lord Chancellors, assisted by the bench of bishops? But we abstain. A good deal might be said on the different species of almanacs, but we prefer to leave our remarks, as they now stand, applicable to these wonderful publications in the mass, rather than in detail. It only remains for us to express a humble hope that we have not offended the British public on this delicate topic.

BURIED IN THE DEEP.

IN FOUR CHAPTERS.—CHAP. IV.

WHEN Mrs Henderson came up to my room, which she did after a second colloquy with Dr Alexander, she insisted on my compliance with his injunctions to seek rest, as soon as I had eaten of the delicate repast which she had prepared to tempt my wayward appetite. I swallowed what food I could, and she left me lying on my bed, with a tender word of sympathy, and a promise that I should not be disturbed. I wonder if the time can ever come in which I shall be unable to recall the suffering of the hours during which I lay there; the calm, still neatness of my pretty bed-chamber, with its chintz hangings, its fresh green carpet, its pure white porcelain toilet equipage, its general air of peace and comfort, contrasting so terribly with the mental strife and torment of its occupant. Can the time ever come, I wonder, when I can fail to summon up again, by the slightest action of my memory, the slow misery of my mental toil as I lay there, putting facts together, drawing inferences, reaching to the full height, enduring the full anguish of conviction, discussing with myself that which I ought to do, and how I ought to do it. Well I knew that any mention of the horrid truth whose knowledge possessed me like a torturing fiend, would be at once treated as a recurrence of the delusion of fever. Was it so? Was I in reality under the influence of a hallucination? Had the shock I had sustained disordered my reason permanently, or at least beyond the limits of the reign of the disease which had loosened its hold upon me? A prey to these agonising doubts, I lay still, as the hours of the brief winter's day crept on; and when they lost themselves in the night, Dr Alexander's answers to my questions had arranged themselves in due

order in my mind, and stood there arrayed in all their terrible significance.

On the following day I wrote to Captain Marjoribanks, who was then in Liverpool, but about to sail in a few days. This is my letter:

WOODSIDE, January 1861.

MY DEAR CAPTAIN MARJORIBANKS—I am deeply sensible of the kindness you have shewn towards me by your frequent inquiries during my illness, and I employ a portion of the earliest hours of my convalescence in thanking you, and also in endeavouring to express my gratitude for all the kindness and attention which I received from you during our homeward voyage in the *Southern Cross*. I am rapidly recovering my strength, and have been able to converse with Dr Alexander, who gave me all the particulars of the melancholy event which made our voyage lamentably memorable. I still feel a little confused about some of the details of the dreadful story, and am tempted to ask you to gratify an invalid's fancy by answering a question which puzzles me. Dr Alexander has told me that the key of Mrs Stamer's door was found within the cabin when the discovery of her death was made, and that the other two keys are supposed to have been thrown into the sea through the window of her cabin. Will you kindly tell me whether the key found on the floor could have opened either of the other doors, or only hers? I trust your next voyage may be more prosperous, and hope to see you return in health and spirits to the friends who value you so highly.—I am, dear Captain Marjoribanks, yours sincerely and gratefully,

CAROLINE HENDERSON.

I received, by return of post, the following reply:

CROWN STREET, LIVERPOOL, Thursday.

DEAR MISS HENDERSON—I was very glad to receive an assurance, under your own hand, that you are recovering, and that you may do so more rapidly, advise you to banish painful recollections. In reply to your question about the keys, I must tell you of the wonderful cunning displayed by the poor maniac in accomplishing her purpose of self-destruction. We discovered that all three cabins—hers, yours, and Mr Stamer's—could be locked with the same key, a fact which she had, of course, found out. So she secured herself from all possible interruption in her own cabin by removing the keys of yours and her husband's, after she had locked each of you safely in. It was a dreadful occurrence, and has, I fear, seriously affected your spirits and nerves. Pray, don't brood over it; and if you must think of it at all, remember how nobly you did your duty to the poor creature, who was, after all, not accountable for her actions. I sail to-morrow, so this is to say good-bye for a long time.—Yours very truly,

ROBERT MARJORIBANKS.

When I had read this letter, every shadow of doubt as to the truth of my own convictions vanished from my mind. The whole of the awful drama lay before me. I am not sure, even now, at what moment, or by what sudden intuition I knew that Mr Stamer had murdered his wife. The knowledge had been mysteriously present with me in the fever; had forced itself upon me during the slow convalescence; and stood by me now, a ghastly truth. In vain I tried to trace the progress

of suspicion, and its transmutation into knowledge. It never had been suspicion; it always had been knowledge. And now I saw it all. He had drugged the nurse, and removed her; he had won the doctor's confidence, and practised on his weakness; he had drugged me; he had drugged her, and murdered her; then, leisurely, while her life-blood drained slowly away, he had imitated the fatal form which her mental disease was wont to assume. The keys of our respective doors had been thrown into the sea from his cabin, not from hers. The devilish device was perfect in all its parts, and its success had been perfect also. His victim, the doctor, and myself, had been his unconscious accomplices. He had stood by my cot. The dim phantom of my fever-dream had been the murderer on his way to his crime. I knew this; I had no power to doubt it; the certainty was as absolute to me as the fact of my existence; but who would listen to me if I attempted to speak? I had been in fever at the time, and under medical treatment; I had just taken, by the doctor's own orders, and from the doctor's own hands, a powerful opiate. Helen Stamer was mad, obviously, notoriously mad; the mania was destructive; and Dr Alexander had frequently declared to me, to her husband, and doubtless to others, his fixed conviction, that 'sooner or later' she would make the attempt which had been made with sure and terrible success. She had made it sooner instead of later, that was all. For the supreme anguish which my conviction of my utter helplessness brought with it, there was neither respite nor relief. The fair, afflicted young creature, who had borne throughout so much of her short life the heavy curse of madness, had gone to her nameless grave in the depths of the ocean with the stigma of the suicide upon her. Her murderer was free, rich, prosperous, rid of the burden of her blighted life. I knew this; I alone, on earth, and the sleepless God in heaven, knew this man's unequalled guilt; and I had no more chance of procuring his punishment, and of vindicating Helen, than I had of restoring to her the life so barbarously taken. At least, however, he should know that his secret was not altogether his own; at least he should not triumph in the belief that the crime and the victim were alike buried in the deep; at least he should writhe under the execration, however he might appear lifted above its feeble influence, of one human being. The long wintry night and the day which succeeded it had passed away; I was still toiling wearily among my thronging thoughts, labouring to arrive at any arrangement of them, shrinking and quivering under their remorseless pain. Late in the evening of the day succeeding that of his visit, a note from Dr Alexander, accompanied by a small packet, was brought to me. The note contained these words:

MY DEAR MISS HENDERSON—You will be surprised, and I am sure pleased, to hear that I am going to Madeira at once, as private physician to Sir Brooke Stanfield, a very rich young baronet, who is in delicate health. Stamer has procured me this appointment, and desires me to proceed to London without delay, to see my patient, and arrange matters. I am off to-night. I send you a small parcel in which you will find some lost property. You have probably not yet missed your wrist-studs. I forgot to bring them with me the

other day, and did not like to distress you then by telling you where I had found them. One was caught in poor Mrs Stamer's hair, to which it had no doubt attached itself when you were doing your last kind offices for her on that fatal night. The other I found inside the board of your cot when I laid you down upon your bed insensible. I have no time for more. Please send a line acknowledging receipt of the studs.—Always yours faithfully,

DAVID LEITH ALEXANDER.

I opened the little packet and the small cardboard box which it contained. Within it lay a pair of flat, plain, gold wrist-studs. They were not mine. There was nothing to distinguish them from hundreds of their kind, but they were not mine. In an instant I knew they were Mr Stamer's. I remembered the metallic clink which I had heard, in my semi-delirious trance, on that horrible night; and I knew now that the sound had been caused by one of these studs falling from the open shirt-sleeve on the arm which had held the taper to my eyes, and striking against the inner side of the cot as it fell.

I need not dwell on what I felt at this new but needless confirmation of the awful knowledge I had attained; the agony of such feelings is not to be described, and my story has but little to do with myself. I knew these studs belonged to Mr Stamer, as well as I knew that his hand had made that horrible gash in the fair white throat it had so often caressed. Could I prove that they belonged to him? No; I could prove nothing but that they were not mine. I could not even prove that they were not Helen's. I had never seen them before; but she might have worn them on that last day. She had gone into my cabin for a little while, supported by Dr Alexander and myself. She might then have dropped one of these studs there, and afterwards the other in her own cot, while sitting on its side, as I undressed her. She had loosened her beautiful hair with her own hands—set it free for its bath of her blood. My conviction that the studs were Mr Stamer's, and that he had lost them as I have said, was unalterable; but to any other perception than my own, baseless as a dream. There was one chance, and one only, of my being able to make any use of the incident which had for me so grave and terrible a meaning. I availed myself of it. Dr Alexander's messenger had been desired to wait for an acknowledgment of the note, which I sent, and requested to be informed to what address I might write to him in London. The reply was, 'To Morley's Hotel.' On the following day I wrote to him thus:

WOODSIDE, January 1861.

MY DEAR DR ALEXANDER—On opening the packet which you sent to me yesterday, I found that it contained a pair of gold wrist-studs, which belong to Mr Stamer. The circumstances under which you found them render it very natural that you should suppose them to be mine; but as they do not belong to me, but to Mr Stamer, no doubt he can explain how it happened that one of them was found in my cabin, as he had not entered it, to my knowledge, either on the last day of Mrs Stamer's life or on any previous occasion. Will you be so good as to furnish me with Mr Stamer's address, as I am anxious to forward to him without delay the wrist-studs which are his, and the jewels which were his late wife's property, and which it

is impossible for me to retain in my possession.—
I am, dear Dr Alexander, very sincerely yours,
CAROLINE HENDERSON.

I had anticipated a speedy reply to this letter, but was not prepared to receive one by return of post. It came, however, and was to the following effect:

MORLEY'S HOTEL, LONDON, Monday.

DEAR MISS HENDERSON—I am rather surprised by the tone and the contents of your letter, which I have handed to Mr Stamer, who has come over from Paris with Sir Brooke Stanfield's mother, who accompanies us to Madeira. Stamer desires me to tell you that you need not trouble yourself about the studs. He has no idea whether they belonged to his late wife or not, and told me so when I shewed them to him at the time I found them, as you might have concluded I had done. He had never seen them, and we naturally supposed they must be yours. Mr Stamer wishes to know whether he is to understand definitely that you refuse to accept the jewels which I presented to you, at his request, as a mark of his sense of your services rendered to the late Mrs Stamer, and also whether you will permit him to recognise those services in any more useful, suitable, or acceptable form. Oblige me by an early reply, and believe me yours very truly, DAVID LEITH ALEXANDER.

It needed only this letter to make me realise in its full extent my complete helplessness. This letter was a defiance, sent to me through Dr Alexander, who was thus unconsciously made to convey to me the triumph of the criminal, whose accomplice he had innocently been. The formal and displeased tone adopted by Dr Alexander was a reasonable expression of his annoyance at what he would naturally consider my unfeeling and uncalled-for discourtesy towards his friend and benefactor. There was nothing more to be done. I must bear the burden of my dreadful knowledge in secret and alone. Thus I have borne that knowledge ever since.

I never sent any reply to Dr Alexander's letter; but I sent the jewel-case to London that evening, directed to Mr Stamer, at Morley's Hotel. Under the lid, before I closed and locked it, I laid a slip of paper, on which I had written the following words: 'Vengeance is mine! I will repay, saith the Lord.'

Dr Alexander is still at Madeira, in attendance on his patient, who will never see England more.

On the 10th February 1863, the first column of the *Times* set forth the following announcement: 'On the 8th inst., at St George's, Hanover Square, by the Rev. Godfrey Stanfield, uncle to the bride, Stephen Dalzell Stamer, Esq., of Stamer Hall, Hants, to Laura Blanche, only daughter of the late Sir Brooke Stanfield, and sister of the present baronet.'

I have since learned, incidentally, that the young lady is her brother's sole heir.

Few days have dawned on London more brightly than that one which witnessed the first drawing-room held at St James's Palace, by command of Her Majesty the Queen, by the beautiful bride of her son. It was a gala-day for youth and love, and bridal happiness; a day on which the old and the wayworn turned their faded eyes a while from the paths of their own weariness, and allowed them to rest with sympathy upon the splendour,

the pomp, and the gaiety which reigned in the summer sunshine.

I had seen hundreds of carriages pass by, bearing their brilliant burdens, and yet my eyes had not grown weary of their meteor-like splendour. As the crowd increased, the equipages were compelled to proceed at a slow pace, and occasionally a halt of the entire line occurred. It was in one of those intervals that my attention was arrested by the occupants of a carriage which had stopped exactly opposite to the spot I stood upon. They were two; a young lady, with a fair, proud, yet sweet face, whose pale golden hair was wreathed with brilliants, and whose white neck and arms were richly decked with similar gems; and Mr Stamer. His equipage was one of the handsomest and most luxurious in all that costly throng; the gentle girl who shared it with him might have vied with the royal bride herself in her sensitive, intelligent, and innocent beauty. Mr Stamer looked as handsome, as refined, as self-possessed as ever, and his eyes passed calmly over my face with so perfect a pretence that they did not see it, that any other must have been deceived by its utter unconsciousness. I was not. I only stepped back when the renewed motion of the line of carriages released his face from my fixed gaze, and extricated myself from the scene, which had become unendurable to me, saying solemnly to my heart, which, like that of the Psalmist, questioned concerning the prosperity of the wicked, 'The day of the Lord is not yet.'

GUN-COTTON.

THE women of Carthage turned their hair into bowstrings, and their jewels into the sinews of war. In like manner, with different materials, might the women of England turn their possessions to account, should we chance to be in the position of the Carthaginians. The fair ladies who adorn the crowded Opera-house, or who lend a grace and charm to the parties of the great, would be startled if told that they carried about them daily the elements of one of the most destructive agents that can be made use of to the detriment of our neighbours or enemies. Yet it is a fact; and should London be surrounded by a hostile force, the mere dresses and garments of its lovely inhabitants are sufficient, by a simple preparation, to add beyond imagination to its defence. In our calculations, we omit the amount of steel in the petticoats of the fair sex, which, of course, is available for shot and shell of all sizes, to say nothing of its being such admirable material for strengthening the guns in the service, after the most approved Hoop pattern. It is indeed hard to believe, that a few days' preparation could convert one of our grandmother's petticoats into a material so powerfully explosive that it has not yet been found possible to use it with safety, and so obstinate to be dealt with, that its destructive effects increase in proportion to the resistance offered thereto. Yet, as will be seen, such is the case.

In the year 1846, a German named Schönbein discovered that by a peculiar method of treating cotton chemically it might be made an explosive agent. This property is not confined exclusively to cotton, but is possessed also by flax, hemp, wood-shavings, and many such materials. Cotton, however, seems to be best suited for the desired substance, which is termed gun-cotton,

from the hope entertained by its inventor and many others, that as the manufacture became more and more developed, the use of gunpowder would be superseded thereby. Whether this hope will be realised, remains yet to be seen. The rapid stride which has taken place in the improvement of gun-cotton since 1846, a period of eighteen years, suggests a favourable comparison with reference to gunpowder, a material which has been in constant use for five hundred years in England. It is true that gunpowder is now a very superior article to the stuff used at Crecy in 1346, but still its composition is at best uncertain, its ingredients are mixed mechanically, and frequently different results are obtained from samples selected out of one and the same lot.

From the great prejudices which at first existed in the public mind at the time of the invention of gun-cotton, and owing to some fatal accidents which arose from its imperfect manufacture, very little has been done in England to perfect this wonderful material. For some years past, the Austrian government have, however, devoted much time and care to costly experiments having for their principal object the introduction of gun-cotton as an artillery agent. The trials of gun-cotton for small-arm ammunition were very limited, since it was rarely experimentalised upon at a greater range than three hundred yards. It was, however, considered expedient to supply the Austrian Imperial Artillery with a certain proportion of gun-cotton cartridges, and at one time as many as thirty-six batteries were supplied with this ammunition only, and we believe that a great many more had half gunpowder and half gun-cotton cartridges.

Baron Leuk, now a major-general in the Austrian service, is the man to whose untiring energy, and confidence in his favourite subject, we are indebted for the perfection which has been arrived at in the treatment of this material. He had great difficulties to contend with, and a vast amount of official obstruction and prejudice to overcome; but he succeeded in having his own way, and was appointed chief of the gun-cotton manufactory at Hirtenberg. Her Majesty's present government, at the recommendation of various scientific and distinguished men, has appointed a commission, with General Sabine, the President of the Royal Society, at its head, to inquire into the nature of gun-cotton, as to the advisability of its substitution for gunpowder, and to what extent this should be carried out. So little is really known about this explosive substance, that this committee may be said to commence their work in the dark, and have to grope their way from step to step, as their experiments either succeed or throw them back on fresh points of inquiry. Independently of the chemical nature of the substance, its mechanical application—that is to say, its shape as a cartridge in thread, in web, in rope, &c., has to be carefully considered—for the same weight of gun-cotton varies in its results according to the way it is made up, as will be shewn.

Schönbein's method of making the article left it dangerous to handle, and liable to uncertain chemical action, resulting in spontaneous combustion. With our present lights, we avoid his errors, and manufacture our cotton—Baron Leuk's gun-cotton, as it is termed—thus: The cotton to be converted is selected of good quality, and as free from seed and

oily matter as possible. It is twisted and made up into skeins of about eight ounces in weight. These skeins are then boiled for a short time in carbonate of potassa, which purifies the cotton. In order to dry the cotton again, and completely separate it from the alkaline matter, it is put into a 'centrifugal machine,' which, whirling round at the rate of five hundred or six hundred times in a minute, attains the desired object pretty nearly. The cotton is nevertheless again washed in running water, and dried a second time in the machine, and then in the sun. It is then immersed in nitric and sulphuric acids, mixed together in the proportion of one part of the former to three of the latter. The skeins are only put into the acid by a few at a time, and worked about for a short period with iron stirrers. The fumes from the acid are anything but pleasant to smell, and are indeed dangerous; but by the simple precaution of the men who work standing to windward, or with boarding between them and the acids, they escape the slightest inconvenience. The cotton is then placed in jars for forty-eight hours, to become thoroughly impregnated with the acid. If it happen to be summer-time, the jars are surrounded by cold water, as the acids generate intense heat, and might cause accidents. After the 48 hours have elapsed, the acid is expelled from the cotton as far as it is practicable by a centrifugal machine, and the skeins are then placed in perforated boxes or frames, which are immersed in a running stream, and kept there for three weeks. The acids used in the conversion of the gun-cotton are of the following specific gravity: nitric acid, 1.53; sulphuric acid, 1.82. This being so very strong, it need not be wondered that three weeks should not be considered too much to free the cotton from the acids.

How simple is the whole process in comparison with the complicated and dangerous mode necessary for the production of gunpowder! The cotton, it will be seen, is always in a moist state while any action is going on that might otherwise cause an accident; gunpowder, on the contrary, is always dry, and being perpetually worked with ponderous rollers and machinery, is constantly liable to accidents if the least grit or dirt gets into the works. At the first start made by gun-cotton manufacturers in England, a lamentable accident took place, which put a stop to the trade, so far as the firm was concerned at least. Messrs Hall and Son, the well-known manufacturers of gunpowder, set up a factory for gun-cotton, and commenced to make it in large quantities; but one day a dreadful explosion took place, killing and wounding a great number of workmen, and in consequence of this, Messrs Hall and Son ceased to make gun-cotton. A large quantity which was already made was buried in the ground in July 1847. Some of this has been examined; and such is the stability of the material, that the specimens, taken at random, have been found comparatively uninjured; that is to say, its quality is merely impaired so far as the admixture of dirt, &c., caused by its burial. In stating the advantages of gun-cotton over gunpowder, we may commence by noticing a circumstance generally ignored by, and perhaps unknown to many scientific men in their calculations of the force of the latter. There is no waste in the application of gun-cotton, from the fact that gun-cotton, on combustion, is

converted wholly or nearly so into gas, leaving little if any ash or residue, so that the whole bulk of a gun-cotton charge acts directly on the shot in a gun. Now, gunpowder, on explosion, leaves a very large amount of matter behind, so that less than half the charge is converted into gas. This is stated at various amounts from fifty to sixty-eight pounds of refuse being left on the explosion of one hundred pounds of gunpowder. So we see that the gases of gunpowder are not only used in propelling the shot from the gun, but also in ejecting at the same time two-thirds or so of the weight of the powder-charge. One of the chief disadvantages which it was considered that gun-cotton possessed was, that it exploded so instantaneously and with such force, that it was considered likely to burst any gun fired therewith. Now we have found out how to control this rapidity of combustion by the simple processes of arranging the cotton to suit circumstances. Baron Leuk can, he states, make gun-cotton so as to burn less than a foot in a second, or as quickly as ~~with~~ part of a second to each foot of gun-cotton rope. This is effected by the mode of making it into cloth or rope as wanted. This may be fairly called instantaneous ignition. All that is needful to insure instantaneous ignition is to shut the cotton up closely. It is one of the many peculiar properties of this peculiar substance, that, like the ladies who adorn themselves so largely in the useful raw material cotton, the more you confine its action the more violent becomes its antipathy to anything like restraint, and it bursts through all impediments with the greatest imaginable force. This quality renders it a substance specially adapted for use in mining operations, whether conducted with peaceful or warlike operations. It has been found by careful experiments that gun-cotton of one-third to one-fourth the weight of any charge of gunpowder will give equal effects in common, and for mining purposes one-sixth will probably be found a fair proportion.

One of the most extraordinary facts connected with the property of gun-cotton—as respects its giving greater results in proportion to the resistance offered to it—is the following. It is on record, and we have seen a photograph of a similar experiment near Newcastle, that a box containing twenty-five pounds of gun-cotton was laid close to some palisading of strong beams one foot square, and driven eight feet into the ground, backed by a second row of beams eight inches square. The cotton was fired, and cut a clean opening nine feet wide, through which, had the palisades been part of a fortification, any number of soldiers could have quickly passed. Had the gun-cotton been loose, it would have produced no effect. Three times as much gunpowder was exploded, but produced no damaging effect whatsoever against the piles.

At the siege of the fort of Ghuznee, and in later days at Delhi, the besiegers captured both cities by forcing a way through the main gates, thus: a select party were told off, who boldly rushed to the gates, and, nailing on a bag of gunpowder, fired a fuze connected therewith, and retired, with the exception of those brave spirits who fell from the deadly fire kept up on them from the besieged. The gunpowder blew the gates to atoms, but a similar amount of gun-cotton would have failed to produce any effect in the same manner. Yet,

confined in a slight box, so that the gases formed might penetrate the whole charge, gun-cotton of one-third the weight of gunpowder would have produced greater effects. We see, that had gun-cotton been used in the above cases, a weight which one man might have carried, and, perhaps, have passed with unobserved, would have answered all the purposes; whilst by using gunpowder, the weight to be carried was necessarily increased beyond the capability of one man, and in consequence more valuable lives were lost than need have been. The prejudice against gun-cotton is great in the minds of most artillery officers; but would they enter into the subject fairly, and weigh the incalculable advantages, which, if perfected, it must possess over gunpowder, there would be many more advocates for its adoption.

Gun-cotton on being exploded leaves, as we have said, no ash or fouling matter, as does gunpowder; this is an incalculable improvement, and at once gives breech-loading arms an advantage over muzzle-loaders which they did not formerly possess. One of the chief disadvantages of breech-loading small-arms was the fouling of gunpowder, which caused the arrangement to clog and get jammed and out of order. Gun-cotton being fired in a polished steel barrel, leaves the polish as clear, after one hundred rounds, as it was before being used. This cleanly property of gun-cotton is a great thing for cannon. The ball may be made to fit much tighter into the gun, so that there is no loss of force from the escape of gas round the shot, which must be the case where gunpowder is used. The dirt left from this latter substance after a few rounds would prevent the ball entering the bore of a gun, which, when clean, would have admitted it with ease. As we have mentioned that one pound of gun-cotton acts with the same force as three pounds of gunpowder, it will be seen at once what an immense advantage this gives in point of transport, as three times the amount of gunpowder ammunition can be carried in gun-cotton. This materially adds to the efficacy of light infantry, as the number of rounds carried by each man may be increased. Notwithstanding the force exerted by gun-cotton, it is a fact that the recoil of a gun fired with a gun-cotton cartridge is less than that of a gun fired with a gunpowder charge of three times the weight of the cotton.

One of the peculiarities of gun-cotton is its tendency to absorb moisture to a certain extent, and no more. It absorbs double the moisture that gunpowder does under ordinary circumstances, but ceases to do so at a certain temperature; while gunpowder continues to absorb until it becomes almost a paste. Gun-cotton again rapidly recovers its normal condition on removal to drier temperature; while gunpowder is ruined if once wet. Gun-cotton may be kept under water any time, almost without impairing its explosive properties; it simply requires drying, to be as useful or as dangerous as ever. If the ammunition of a man-of-war was gun-cotton, and a fire broke out, the magazine could be flooded at once, without fear of damaging the gun-cotton. Gunpowder in very damp places becomes so deteriorated, that it is useless to attempt to remake, much less to use it. There is little or no smoke attendant on the combustion of gun-cotton, so that guns and skirmishers would escape a good deal of the unpleasant attention which the smoke of their

weapons draws upon them from an intelligent enemy. Great stress has been laid by objectors on the fact, that gun-cotton, when packed for some time, shews tokens of acidity, which shews the liability to spontaneous combustion; but if left for some time open, this acidity disappeared. Some boxes of gun-cotton were left at a railway station in Lombardy for about a year, no one knowing what they were, and at last they were taken possession of by the Italian government, and found to be gun-cotton ammunition, forwarded for the use of the Austrian army before the peace was made.

The disadvantages of gun-cotton are chiefly its liability to spontaneous combustion from acidity reappearing after its manufacture, and the difficulty of regulating its force. The first objection, we think, is not beyond the power of our chemists to remove, and the second there can be no doubt of our capability of overcoming. The proper shape and size is all that is required to obtain to effect this. The advantages are very many: safety of manufacture, ease of stowage, cleanliness in packing and firing, absence of smoke—that its power is three times that of gunpowder when equal weights are used; it does not heat a gun as gunpowder does, nor is the recoil so great as with this latter material; it cannot be injured by water; its manifest adaptability for breech-loading arms; giving out no smoke on being fired, it is very much suited for use in casemates, between a ship's decks, &c.; its terrific force in mines; the small risk in transport, and certainty of its not being injured by travelling, whereas gunpowder fritters away, causing much dust. It gives more formidable effects as bursting charges for shells, breaking those projectiles into double the number of fragments that gunpowder would.

LADY FLAVIA.

BY THE AUTHOR OF 'LORD LYNN'S WIFE.'

CHAPTER XVII.—IN MINDEN STREET.

THE rooms which the Fords occupied at Number seventeen Minden Street, St James's, were larger and handsomer rooms than are often to be found in a London lodging-house; and the furniture, if slightly dingy, was good and costly furniture, that had been supplied by Dowbiggin or Seddon, when William the Fourth was king. The street itself is not one of the most cheerful of London thoroughfares; indeed, nothing but a Hansom cab, that seems to have lost its way, or a hired brougham from the neighbouring livery-stables, ever traverses its hundred yards or so of genteel desolation. But if not the rose any more, as when the bloom of freshness was on the memory of that dubious victory which had given name to the place, Minden Street is near the rose. It is close to the parks, the palace, and the theatres; and might really be said to be, as so many other spots in this metropolis are only advertised to be, within five minutes' walk of everywhere.

In the Minden Street drawing-room were two persons, a tall elderly man, and a girl of nineteen. The colonel—you would have known him for a soldier, at half the length of Regent Street—had rather a stern look when his sunburnt features were in repose; such a look as the long habit of command and long intercourse with a supple but wily race impart to the firm mouth and keen eyes

of a brave and clever man. But when the colonel smiles, and especially when he speaks to his daughter, Amy Ford, the whole character of the face is changed and softened; and the grim old warrior's inner nature seems well-nigh as gentle as a woman's. He is a very distinguished officer, is Lieutenant-colonel Richard Ford; and his name is known and respected in every cantonment in India, in the durbars of native princes, and under the tents of wild tribes, who cherish the name of Ford Sahib as of the kindly conqueror and wise lawgiver to whom they owe a deep debt of gratitude. He has been a 'political' as well as a fighting officer, has Colonel Ford, has maintained England's honour and England's cause at the courts of cruel despots, who had never heard plain truth till they heard it from his lips, and has spoken as boldly as if an army were at his back; even when he stood alone in the centre of a crowd of enemies thirsting for his blood, and waiting but a sign from their prince to strike him down. In those intricate negotiations where poison and the dagger are deemed fair diplomatic adjuncts, where threats are breathed, and bribes proffered, and the very atmosphere of the divan is fraught with lies and forgeries, and plot and counterplot, Richard Ford had borne himself wisely and well, with courage undismayed and loyalty untainted. An envoy, a soldier, he was a good type of the best class of the old Company's servants, and had filled high civil appointments in time of need, with great credit to himself, and greater advantage to the country.

The colonel had come back from India comparatively a rich man, though poor, indeed, when his savings were compared with the treasures amassed by those who shook the pagoda-tree in the shamefully glorious days of Clive and Warren Hastings. But every anna of the money was honestly earned. There was no scent of blood, no stain of tears, upon the rupees that Colonel Ford converted into British securities. He had high pay and pension for the evening of his days, and might so far have been said to be recompensed for his work. The colonel was not a grumbler, and did not grudge the wear and tear of sleepless nights and long marches, and the thought and toil that had left his temples bare and his brow furrowed. But India had robbed him of more than it could ever give him in return; and the recollection of his dear young wife and the two bright boys that the fell climate had struck off in a few short hours from the roll of the living, came back like a sad dream of the past to sadden the stout heart of honest Richard Ford.

Amy was his only surviving child. It had been a sharp trial to the bereaved father to send that little prattler away to Europe and safety; but the colonel was the least selfish of men. He made the sacrifice, and toiled on for years in the burning land where men barter health for gold, that he might have a fortune garnered up for Amy. He longed to see the child; but he steadfastly resisted the temptation to send for her back to India; and as for furloughs and a long leave spent at home, Ford Sahib was too much valued in the troubled and anxious times that then brooded over India, easily to be spared. He had his reward now, as he sat in that London lodging and saw the fresh bloom of health and happiness on his daughter's cheek; but with the pleasure came sadness. Amy was very like her mother, the colonel thought.

Amy Ford was indeed a pretty, kindly, honest English girl, with a rosy cheek, hazel eyes, and nut-brown hair. She was no wonderful beauty to fascinate all who came near her; but hers was a face that it was very pleasant to look upon, radiant with innocence and good-humour. She was very happy. The five or six weeks she had spent in London had been delightful to her, and Minden Street was Eden. Hers was one of those fortunate natures that derive pleasure from surroundings which others accept grudgingly, and that find harmless sources of joy as instinctively as the bee sucks up honey from the calyx of a flower. Her father, whom she remembered through the hazy atmosphere of childish memories, and who had been her constant correspondent since she was old enough to read and reply to his letters, was with her again, no more to go back to that odious India. She had done with her convent school and its drudgery. She was indulged, petted, and made much of. She had seen many sights and shows in that ecstatic six weeks, and had relished them as only the young can relish such delights. And her cousin Charley—well, Charley was the dearest fellow in the world, and was almost as much at home in Minden Street as in his Temple chambers.

It had always been the colonel's wish that, if the young people could only like each other as well as he desired that they should, Amy should marry Charles Ford, the only son of the colonel's only brother, who had been an Indian judge, and had died at some dreary place in the Mofussil. The said Charles, to the best of the colonel's knowledge and belief, had turned out a fine young fellow, and he and Amy had taken to each other wonderfully from the first. The cousins had met before, at an old aunt's house in Hampshire, where Amy had lived during those first years before she was sent to complete her education—first to a school in Brussels, and then to the French convent of Our Lady of Carmel. But Charles was then an Eton boy, and Amy a little lass in a short frock, and neither had an idea that the other would ever come to be dearer to him or her, than all the world beside. Yes, all the world, though Amy would still have fondly vowed and protested that she loved her father the best. But the attachment between the cousins was ripening day by day. It was smiled on by the colonel. Charles's widowed mother desired no better lot for her son. The match, in fact, was a very suitable one; there would be some money on both sides, and Charles Ford was just called to the bar, and, of course, would be Lord Chancellor.

'What is the matter with my pet? Come, Amy, my girl, let us hear what it is that is troubling that little head of yours. Are you tired of London? Or have you and Charles quarrelled? Or is it the mauve bonnet that the milliner talked you into taking, against your better judgment, that is weighing on your mind? I never did think well of that bonnet, myself,' said the colonel, who had for some time been watching his daughter's thoughtful looks.

Amy turned frankly towards her father, and her answer was prompt: 'No, papa. I wasn't thinking of bonnets at all. I was thinking how very, very strange it was that Flavia did not write, and I was wondering whether my letter ever reached her.'

The colonel made rather a wry face. He had his own opinion as to the probable cause of the

interruption of friendly intercourse between his daughter and her titled friend. He made answer gravely: 'You must remember, Amy, my love, that Lady Flavia—what's her name? Vere—Vane—Clare? yes, Clare—a boarder in the convent at Grésnez-les-cloches, was a very different person indeed from Lady Flavia Clare after her entry into society. She is among her grand relations now; she has no doubt inherited a great deal of property; and her beauty, and her rank, and her money, are three magnets that will draw friends and admirers around her as surely as the loadstone draws iron. I don't blame her, I am sure, for the shortness of her memory; nor will you, when you have seen a little more of the world, wonder that she should forget'—

'But Flavia was not at all the sort of girl to forget her old friend, her sister almost, because she is rich, and living in splendour,' burst in Amy impetuously, with her cheeks flushing scarlet. 'For shame, papa, dear, to misjudge my poor darling so! Flavia is the very last, last person in the world to be proud or forgetful, or ungrateful, the last and most unlikely to be changed for the worse by prosperity, of all the girls I ever knew.' (The colonel struggled in a praiseworthy manner here to preserve his gravity of countenance, as Amy appealed to her large experience.)

'The very night before she left the convent, to go over to England, at her dying father's summons, she—— But you'll think me so silly, papa, if I tell you.'

And Amy coloured afresh. But the colonel gently replied, that he should be glad to have his child's confidence, and would promise not to be a very severe critic; on which Amy went on thus: 'We had been talking in our own little room, papa, till very late, on that last night, as girls will, when anything particular excites them; and when I fell asleep at last, and had been asleep some time, I suppose, I was awakened by—don't laugh at us, papa—by the sound of sobbing close by, and I looked up, and there stood Flavia in the white clear moonlight, at my bedside, with her beautiful dark hair all loose over her shoulders, and her feet bare, and her poor sweet face all stained with tears, weeping as she stood there and watched me sleep. And I put my arms round her, and cried too—you'll think us very silly, papa—and she was cold and trembling, and quite pale, like a ghost, in the ghastly white moonlight; and after a long time, poor love, I managed to comfort and calm her, and then I asked what it was, and she tried to smile as she said: "Amy, dear, I'm almost ashamed to tell you; but—but I could not sleep. I feel so cold and sad. I seem to dread to-morrow. It must be nonsense, of course; but I feel as if some evil was going to happen—I do, indeed, darling. And when I fell asleep just now, I dreamed—oh, it was a horrid dream." And she shuddered, and left off talking; and I could never get her to tell me what the dream had been, and indeed I did not like to distress her by teasing her about it. But I know she thought her fears were a presentiment of evil.'

This was a long speech; but the colonel listened to it with indulgent patience, and he had the grace not to smile. He knew that nothing so checks the confidence of the young as the ridicule of their elders. But there was a little dry humour in his tone as he said: 'And what came of the

presentiment? I mean, what occurred to justify the young lady in her apprehensions?

'Why, nothing that I know of,' said Amy hesitatingly; 'and indeed, papa, I never saw it in the same light that Flavia did. You see she was very young of her age, and rather fanciful; and it must have been so strange and forlorn to her to go away from the convent that she had grown to regard as her home, since, poor love, she hardly remembered any other. She came to the convent quite as a little child, you know, and'—

'Yes, I know. You told me all about it by letter and *viel voce* too, pet,' said the colonel, with a slight yawn. He was not very strongly interested in this schoolfellow of his daughter's, nor did he believe in the solidity of female friendships. Moreover, like most Anglo-Indians who have spent their lives in a country where, in default of hereditary rank, the chief places are occupied by an official aristocracy as professional as the Mandarins of China, and where lieutenant-governors do duty for earls, and sub-collectors occupy the position of, say, the British baronet, he found himself strangely at sea with regard to social precedence at home. He had a prejudice to the effect that the titled classes in England held themselves aloof from those who were untitled, pretty much as he had seen the covenanted servants of the Company eschew the fellowship of the Eurasians and European 'adventurers' who belonged to the ranks of the uncovenanted. And it may be that his long experience of the sharply-drawn distinctions of caste among the natives, corroborated his simple theory of English society. Now, the Fords were of gentle blood, but of short pedigree and homely alliances; and the colonel had little doubt that Lord Mortlake's daughter had taken that fact to heart, and had, as her knowledge of the world increased, determined to 'drop' her girl-friend of other days; and hence the silence that had caused more pain and surprise to Amy than she cared to acknowledge.

'Well, well,' said Colonel Ford at last, 'you may see your friend sooner than you think, and I hope you may not find her the worse for the few months that have passed since you parted with her. Slochester is her post-town, isn't it? Well, I have written to accept your Uncle William's invitation, and we shall go down next week. I take it for granted that Lady Clara—no, Flavia—comes into Slochester sometimes for shopping, or flower-shows, or concerts—though, to be sure, it is getting too late for flower-shows; but I dare say there will be something going on. Shall you be sorry to leave Minden Street?'

'N-no,' said Amy wistfully, though at the first announcement her hazel eyes had sparkled, as young eyes generally do, at the idea of any stir or change.

The colonel smiled, almost imperceptibly. 'Where's Alleyne's letter?' he said, feeling in his coat-pockets for the missing document. 'There's an invitation for Charley, too, unless I'm much mistaken; and— How the time flies! to be sure. It is time for you to put on the mauve bonnet, miss, if you mean to be at Victoria Station in time for that Crystal Palace concert—not much in my line, to be sure, as they persist in singing Italian instead of Hindustani; but Charles says it ought not to be missed on any account; and there's his rap at the door, so make haste, and put on your finery, pet.'

So those three, for the rap at the door of the Minden Street lodging-house was really that of Charles Ford of the Middle Temple, went down to the Crystal Palace, and spent a pleasant afternoon, in spite of the colonel's not unnatural preference of the oriental tongues, which he knew, to the modern European languages, which he did not know.

And it was settled that Charles Ford also was to be a guest at the Slochester parsonage; though, owing to some tiresome case or other that was to come up for hearing before the Vice-chancellor, and the conduct of which, in that uninteresting stage of the proceedings, fell to young Ford as junior counsel, while his seniors were enjoying the last sweets of their vacation, he could not leave London so early as his uncle and cousin.

The Rev. William Alleyne, the 'Uncle William' in question, was a brother of Amy's mother. He was incumbent of one of the parishes into which Slochester was divided, and belonged to that class of town vicars whose social position was eclipsed by that of the cathedral dignitaries, even as their little churches were dwarfed by the colossal proportions of the central fane itself. The dean and canons and prebendaries regarded these humble brethren in much the same light as the Benedictines and Dominicans, their predecessors, had eyed the unlearned secular clergy, who did parish duty, and held their breviaries upside down when affecting to read the dog-Latin they knew by rote. The Brahmins who officiated in the mighty temple of St Willibald Martyr, with its tombs of Saxon saints and Norman queens, its reliquaries that faithful lips had pressed when the Plantagenets were kings, its stone steps worn hollow by the knees of old English pilgrims, thought little of the Rev. William Alleyne and his church of St Eanswith. There were many such churches in Slochester, little dull-looking edifices of red brick or gray flint-stone, where scanty congregations gathered behind the tall partitions of the worm-eaten pews, and where the feeble organs piped out a weak music, that seemed the thinner by contrast with the sweet full thunder that poured from the great gilded tubes of the minster organ. Mr Alleyne and his fellow-vicars dwelt outside the Close, and the Close was not on visiting terms with them.

But St Eanswith's was a pleasant parish, close to the crumbling city-walls; and it had a genuine parsonage, with a fine old garden, wherein grew the biggest mulberry-trees and the tallest cedars in Slochester; and whose sunny south wall ripened peaches even mellow and more melting than the deanery peaches; and to this snug professional abode, Mr Alleyne, and Dorothy his wife, had invited their brother-in-law, Colonel Ford, and Amy their niece, and Charles Ford their connection; and the invitation was accepted. One of Mr Alleyne's written inducements to the colonel to pay an early visit to Slochester, was the prospect that the fancy fair might amuse Miss Amy, 'who had most likely never seen that kind of thing.' And thus the straggling threads were taken up, one by one, in the hand of Fate; and surely though slowly were those seemingly disunited threads spun and woven into the web of human destinies—amongst others, that of one who might have seemed secure from the shafts of fortune—Lady Flavia Clare.

CHAPTER XVIII.—THE CLOUDS GATHER.

'Stand back! stand back! Get off the pavement, you boys, or I'll drop into some of you. Little owdacious varmints!—This way, ma'am, please.—Coachman, you get on, and make way for the other carriages to come up.—Look sharp, you with the bay horses!—Yes, my lord; been here some time, my lord, all the ladies have.—And no sky-larking, Bill Jenkins, or I'll walk you off.—Quite right, miss.—Hulloa! there; where are you pushing to? You can't pass without a ticket!'

Sergeant Owen of the city police had quite enough to do, and got very hoarse and thirsty after an hour or so of this mingled dialogue and monologue. The people, attracted by the brilliant festival, pressed and squeezed one another on the muddy pavement in front of the town-hall, gaping, staring, and elbowing; being thrust back, and trodden upon, and put in peril by stamping horses and rumbling carriages, and punched in the ribs by official truncheons, and splashed by passing wheels. Yet they behaved with the good-natured, patient, inquisitive endurance in which a nineteenth-century crowd is pre-eminent, and made way for the privileged with perfect cheerfulness.

The fancy fair was being held at the Slochester town-hall, in the great room upstairs; and the preparations were on a scale of dazzling splendour that almost took away Slochester's corporate breath. The great staircase was covered with crimson cloth; the banisters were roped with silk; the large room where the magistrates, and conjurors, and Christy Minstrels were wont to play their several parts at proper seasons, was gay with flowers, evergreens, streamers, and stars of bayonets and muskets, the latter ornaments contributed by the regiment of infantry at Slochester. This regiment, a crack corps, with a good fatherly colonel, had done its best to help out the show. Its trophies of weapons and captured spoils, Sikh helmets, Afghan chain-shirts, Mahratta tulwars, Maori spears, Chinese gongs and dragon standards, and a gilt Burmese umbrella, were adorning the walls. So were the colours of the corps, the brave old weather-stained flags, 'full of honour as though they could feel,' with just three or four shot-holes through the silk. The Waterloo and Peninsular colours of the regiment, ragged with French bullet-holes, were hung in Chelsea Hospital; and now these pennons in their turn were getting almost too ancient for use. But there they swung, on staves wreathed with rose and laurel, over the Slochester fancy fair, while the regimental band banged and blew its best, and in its intervals of rest was relieved by the band of the Dragon Guards.

There were plenty of coquetish stalls, more or less tastefully set out with goods for sale, and more or less fortunate in the wit or beauty of the presiding lady-shopkeeper. There was a post-office, or rather the Poste Restante branch of a post-office, where any rash inquirer, by payment of a shilling, could become possessed of a letter containing verse of a sarcastic and depreciatory character. Sometimes the rhyming epigrams were dull enough; but sometimes, when Chance caused the cap to fit, they had a cruel pungency; and the public reading of them convulsed the audience with wicked merriment. Over this post-office, a lady—it was bold, black-browed Mrs Bangham—held sway. So with respect to the pastry-cook's stall. Blanche Pender,

a pretty, brainless creature, with a slim figure and glossy brown hair, like a spaniel's ears, was confectioner-in-chief, and smiled a welcome to the hungry; while two sharp-witted younger sisters kept a due watch on the fiscal interests of the concern.

In the dean's half of this bazaar, the main attraction was the showy stall where was to be seen Violet Vavasour, tall, dark, and superb, selling fancy wares at fancy prices, and rather commanding custom than soliciting patronage. Miss Vavasour was a reigning toast in the county, or would have been, had health-drinking been yet in fashion—a grand girl, well born, well bred, and rich in beauty, in good qualities, and in everything but money. She was the daughter of a gentleman with a bemortgaged estate, and she had four red-fisted brothers to inherit the dubious patrimony. She had never been to London, except at Exhibition-time, and had had but a sorry education imparted by cheap governesses. Yet she ruled over half the shire in right of her beauty, and it was well known that she might marry half-a-dozen men with ten thousand a year apiece, if she would but consent to say Yes where she had civilly said No. She was of sterling gold, not very witty, perhaps, but lively and good-humoured in her royal way, and it is no wonder if the county crowded around her stall.

But at the other end of the room were arrayed the opposition attractions of the bishop's party; and to the friends of Mrs Dibbs, who watched every coin that was paid across the counters, it was almost as important that their own saleswomen should draw the larger receipts, as that the Yellowboys window should once more 'fling a bloody stain' upon the pavement of the cathedral. If the dean had the post-office, the bishop had the pastry-cook's. If the deanery people had made alliance with Mrs Bangham and her black eyes, the palace had almost as potent an auxiliary in Mrs Faddleton, who was shaking her fair curls over a collection of photographs, near the music-stand. The dean was happy in the support of the beautiful Miss Vavasour; but metal as attractive was to be found on the other side, more attractive, even, for the tide of popularity obviously flowed towards the new star that Mrs Dibbs had been lucky enough to allure within her own orbit.

The attendance was large, larger by far than on any of the few previous occasions of the same kind within the memory of Slochester's oldest inhabitant. The general public, that huge floundering leviathan for whom so many baits are daily provided, and into whose slippery sides so many barbed harpoons are daily driven with more or less of force and skill, had submitted, like the meekest of mythological dolphins, to be harnessed to the car wherein Mrs Dibbs represented Amphitrite. The county had mustered in great strength, bringing in with it volunteer purchasers from the bordering shires. The commercial towns had sent a sturdy contingent of well-to-do customers to the rescue of St Willibald Martyr. The men of Woofsley, the men of Fullington, the ship-owners and merchants of Spiceport, the paper-makers of Bleachampstead, the carpet-weavers of Shuttlingham, were not what the Close of Slochester considered as 'sound' on church matters. They had had many a fling, by the mouths of their M.P.s, and the pens of the editors of their local journals, at the lotus-eaters of the Chapter, at the

dean's obstinacy, at the sleepy sinecurism of the steady port-drinking canons; but in the hour of misfortune they came gallantly forward to help their old antagonists; got up a noble subscription, unasked, and sent troops of moneyed men and women, ready to empty their purses for the salvage of Slochester Cathedral, the pride and ornament of the diocese.

'This way, my dear. What a crowd, to be sure! Don't let go my arm, for if you do, I shall never get near you again. What shameful crushing! Round here to the left, and I'll take you to her,' said the Rev. William Alleyne, as he did his best politely to insinuate his way through the well-dressed throng, with his pretty niece Amy Ford upon his arm. A pace or two behind, the colonel was following with Mrs Alleyne. Mr Alleyne was just such a clergyman as may be seen by the score at a visitation—a worthy little parson with very short limbs, a plump body, a grizzled head, and a ruddy clean-shaven face, telling of country air and long walks. His white neckcloth was neat, but not tormentingly tight, and his black garments fitted him with comfortable looseness. He read the *John Bull* newspaper, wore roomy boots and a woolly hat, saw no harm in the theatre, provided Shakspeare supplied the play, and would as soon have thought of calling morning-service by the name of matins, or of ordering a cassock-vest, as he would have done of shaving his head in emulation of Brother Ignatius. He was a good parish priest of the pattern of 1820, and did his duty ungrudgingly in a queer old-fashioned style that was illogical, no doubt, but which won the love of the poor at his gate. The bishop, too, had a considerable respect for William Alleyne.

He was very hot, now, was the vicar of St Eanswith's, and if mortal fear lest his left foot, tender still from the last attack of his hereditary gout, should be trodden on by some careless heel. But he felt a certain pride and satisfaction, too, in giving pretty Amy his arm, and in hearing various laudatory whispers, which the sight of the good-looking young stranger in the mauve bonnet elicited from Slochester amateurs of female charms. And Amy really looked unusually well, for her cheeks were glowing, and her eyes were sparkling; she was evidently excited on some subject or other. Such was the case. Charles Ford was still up in London; but Lady Flavia Clare was known to be a stall-keeper at the fancy fair, and Amy was anticipating the pleasure with which she and her quondam schoolfellow would greet one another. There is something passionate in those feminine friendships that girls form, and Amy was true still to her old affection. She had persuaded herself that her letter had never reached her friend, or that the reply, through some postal defalcation, had miscarried. The apparent unkindness of the last few months, she had forced herself—no hard task for one so gentle and good—to ignore or explain away. She was sure that her dear friend loved her still; but yet her heart throbbed in a quick apprehensive way at the thought of their meeting thus abruptly, and in public.

'That's Miss Vavasour, at the great stall where so many people are gathered. No, not where you are looking—the tall girl in blue—a fine young woman, quite the belle of the county. She puts me in mind of a dahlia—rich, and dark, and stately. But I think your friend Lady Flavia is by

far the prettier of the two. We shall see her directly. Quite a pleasant surprise,' said the vicar, and he did not feel Amy's arm tremble as it rested in his, so fully was he occupied in making his way without detriment to his own gouty foot or the skirts of his fair neighbours. The military band was playing a wild waltz. The pressure of the people was denser at the point which the uncle and niece had reached than it was anywhere else, and they progressed slowly, followed by Mrs Alleyne and the colonel. Suddenly they came upon the bishop, sleek, black, and glossy as to his garments, as if his lordship's broadcloth had been cunningly woven from silk, not wool, supple, smiling, and slightly nervous as to his deportment, yet obviously anxious to unite dignity with conciliation. The episcopal office is not an easy one, now a days, to fill with credit or comfort, especially if the holder be a thin-skinned personage with very little of the Anax Andron for that sensitive epidermis to cover. The Bishop of Slochester was an excellent man, and his sins of commission, to use the technical phrase, were wonderfully few; but his was not the head on which a mitre sat becomingly. One glance at the fat, flabby, white face, at the weak mouth and vacillating eye, at the pompous, yet pleading helplessness of the good prelate's manner, was enough. Bishop Dibbs was an extreme example of the round man stuck into the three-cornered hole.

'How d'ye do? how d'ye do, Alleyne?'

'How do you do, my lord? Getting on famously here, I should think! The fair will bring in more than was expected.'

'Yes, yes, answered the bishop, furtively wiping his forehead, and looking as if he were not quite sure whether to find it hot might not be construed by some censor or other into a shirking of his episcopal duties. 'Mrs Dibbs is much pleased; Mrs Dibbs is delighted. Your wife quite well, I hope? Good-bye to you!'

And as the prelate shuffled off crablike, a view was obtained of the circle around the stall where the buyers and chatterers were thickest, and whence came the sounds of incessant laughter and conversation. The focus of all this was immediately around a young lady whose stature was rather below the average, who was dressed in white, and whose dark curling hair was worn with a sovereign contempt for fashion. But it was evident that fashion did not resent this rebellion, for the crowd of customers and spectators was even greater than that which rallied round Miss Violet Vavasour. Lady Mortlake and her daughters were there, and Sir Neville Beecham, who had become insolvent by reason of his frequent purchases, and now stood gaping admiringly at the beautiful stall-keeper. There, too, were many of the county grandees, of the Spiceport folks, of the officers in garrison, and of other miscellaneous people. There, too, were London exquisites temporarily airing their elegance in the country, and whom the county papers, on Saturday, would announce, with a flourish of trumpets, as 'a brilliant and distinguished company, among whom we noticed Lord Plantagenet Vere; Captain the Honourable Alured Fitzalaric of the Guards; the Right Honourable Stephen Skinner of the Direct Taxation Office; Bullamy Pledge, Esq., M.P.; Count Ruffanoff and Baron Tuffanoff of the Russian Embassy; Crespigny Cremer, Esq., of the Foreign Office; &c.

Mrs Dibbs was in her glory. The receipts were great; and she should be able to pour more into the common purse than the dean could hope to do. Lady Flavia Clare was a great success. She was beating Miss Violet Vavasour out of the field. She was new, and that is something with a fickle public; but her merits did not depend on mere novelty. Her beauty, her readiness of repartee, the charming half-infantile grace with which she did her work as an amateur-shopwoman, more like a lovely overgrown child playing at some game, than a genuine trader, won all eyes, and not a few hearts. She chained the London dandies, Vere and Fitzlario, to the neighbourhood of her counter. She bewitched the last sixpence out of the pocket of Sir Neville, and indeed that unlettered baronet was seriously revolving in his mind as to whether he could not revert to the principles of primitive barter, and 'swop' his drop-chain and gold sleeve-buttons for papier-mâché envelope-cases and malachite pen-trays, so as again to have an excuse for drawing the flattering attention of the lovely sylph upon his flaxen-headed self.

Yes, Lady Flavia Clare was a great success. She was happy, sparkling, in the most mischievously high spirits. She was in her element now, conquering rivals, turning the heads of all men, making simple swains draw involuntary comparisons between their engaged ones and that peerless Titania who reigned over the stall on which their wondering eyes were bent. Dear Georgy was a good girl, of course, and Robert loved her; but *how* large and clumsy her hands looked when compared with that tiny white hand that was now proffering to Robert a guinea bouquet of lilies of the valley; such a hand! too perfectly beautiful to need the glitter of rings to adorn it. Georgy was pretty—to doubt it would be treason; but she looked quite dowdy and coarse when compared with that pure white brow, those pink-flushed cheeks, those bright blue eyes, glittering with lambent light, that mass of ebony curls, to which Georgy's braids of hair, charitably called auburn, seemed so poor and common. But those were not the only triumphs. Sober fathers of families, broken in for so many years to run quietly in double harness, that they might have been warranted in any mart in Christendom, suddenly threw off a few lustrous of their age, and became spendthrift slaves to the Circe from Harbledown. They crowded about her, and bought the privilege of a few smiles and a few words at any price she chose to set on the stock-in-trade of pretty toys heaped up around her. She took their money, and laughed at them, at their compliments, at the melancholy expression that the old boys contrived to throw into their poor old eyes; but she laughed so good-humouredly that they took no offence.

It was afterwards, when sad and terrible events had caused that bright holiday of the fair to stand out like a shining landmark against a dark background of black clouds—it was afterwards remembered that throughout that afternoon Lady Flavia had not said one word that even hostility itself could call ill-natured. And this could not be said of all the fair saleswomen. Mrs Bangham was giving her tongue free play, and she spared no one whose appearance or antecedents pointed them out as butts for her boisterous ridicule. Mrs Faddleton was having her verbal revenge for the criticisms of the 'slow coaches' of the place, and was flippant

with many, and spiteful with some. But Lady Flavia's wit wounded nobody. Her arrows, though sharply shot, were not such as rankled in the wound. The laughter around her stall was as harmless as summer lightning.

'Those people are just going to move, so now, my dear, you see her at last,' said Mr Alleyne.

'Her! where? Why, Uncle Alleyne, you don't mean'—said Amy, bewildered, and glancing up at her uncle in blank surprise.

The vicar was just then returning the condescending bow of Mrs Dibbs, who stood beside Lady Mortlake, near the stall.

'That's Mrs Dibbs, the bishop's wife,' he whispered; 'and that's the countess, your friend's cousin, and the others are her'—

'But Flavia! where is Flavia?' asked Amy, with quite a quaver in her voice; and she trembled very much. A surge of the crowd swept them forward at the same moment, and bore them close up to the stall. The vicar looked down, surprised. 'What's the matter, Amy? Too hot for you, eh? I feel quite stifled myself.'

'No, no,' gasped Amy, while her eyes dilated, and her lips grew white, and all the bright colour faded out of her face. 'Who—who is that at the stall? I did not catch the name, perhaps.'

The vicar turned to his brother-in-law and his wife, then close behind. 'Richard, I'm afraid your daughter's ill. Heat too much for'—

'No, no,' again earnestly whispered Amy. 'Only one word, uncle! Who is that young lady, in front, with the dark curls?'

'Who?' answered the vicar, arching his gray eyebrows. 'Why, Lady Flavia Clare, of course. There's no mistaking—Heyday! Ford, Dolly dear, let's get her out of this.'

It was too late. Amy, whose ghastly pale face had suddenly alarmed the good clergyman, fell back, fainting, and lay helpless and insensible upon the floor. Instantly there was a rush and a cry: 'Something wrong! somebody taken ill! Oh, it's a lady that has fainted, is it?'

Then everybody seemed to converge towards the spot, moved by compassion, by curiosity, or by that odd nervous thrill that pervades crowds, but which is neither one nor the other. But Richard Ford had caught up his daughter in his strong arms, and was pushing his way to the door. Everybody called to everybody to stand back and give the sufferer air, and as the Alleynes and their guests passed, many voices were raised. 'Poor thing! poor thing!'—'It's the heat'—'Give her air'—'Open one of the windows'—'Cold water'—'Brandy'—'Burnt feathers'—'Try these smelling salts'—'Here's a vinaigrette, Mr Alleyne;' &c. But the colonel never halted till he had got out into the freer air of the landing-place; and there they stopped, and Amy revived a little.

'You are better now, pet? It was the heat,' said the colonel, supporting his child's head.

'O take me home, take me away; please take me home!' said Amy piteously; and home they conveyed her forthwith, in one of the many carriages that were kindly offered by their owners for the accommodation of 'the poor young lady.'

'It was the heat,' said experienced Mrs Alleyne.

It so happened that Lady Flavia Clare had not seen Amy fall; her attention had been claimed elsewhere at that moment, and when the commotion caused her to turn her head, the crowd had closed

in so as completely to hide Amy from her view. She merely gathered from common rumour that a lady had fainted.

'It's a niece of old Alleyne's,' said one of the bystanders, to whom the clergyman was known; 'quite a stranger here. I saw her at the cathedral on Sunday. She's rather pretty, poor thing.'

Lady Flavia turned towards the last speaker. 'Was it a young lady I noticed just now in front of the stall, in a mauve bonnet, with light-brown hair, and a rather pretty face? She was very much flushed, and had a scared look; was that the person who fainted?' asked Lady Flavia, with an eagerness that surprised herself. The truth was, that she had noticed Amy's eyes fixed upon herself in a sort of inquiring wonder, as of one who tries to trace a resemblance, or to recognise some greatly-altered face that was once familiar.

The gentleman appealed to, a spruce young curate in an M. B. waistcoat, who was chaplain-expectant to his uncle the bishop, so soon as the heavy clergyman now occupying that post should have made up his mind to accept the benefice of Fenny Eelwich, with its great tithes, ague, and isolation, replied at once: 'That is the young lady, sketched to the life. 'Pon my word, Lady Flavia, you have a power of dashing off a portrait that—that—why—of course'— But before the young divine could piece the broken thread of his discourse into a compliment to Lady Flavia's faculties of perception and description, Captain Fitzalaric chimed in: 'I noticed the girl when she came in, and to tell you the truth I envied her a bit, she shewed such a delightful aptitude for being pleased—such as I haven't felt for ages and ages, not since I went to the pit of the Haymarket, and ate hardbake, on my way home from Eton. She's the daughter of that tall old gentleman, a fine old fellow to look at—seen a deal of service and that—Colonel Forbes or Ford, or some such name—yes, Ford. Shouldn't wonder if he's the Colonel Ford whose retirement was mentioned, with a puff about distinguished services, the other day in the *Army and Navy*. He looked like a Quitti. She's a Miss Ford; but I'm afraid her pleasure's spoilt for to-day—a pity, too!' said the good-natured Guardsman, in conclusion.

Ford! And with a father fresh from India! The mention of that name was a wet-blanket, under which Lady Flavia Clare's joyous spirits drooped. A shade came over her bright face, like an envious cloud intervening between the earth and the sunshine. She talked and laughed still; but the music had gone out of her laugh, and the charm from her words. She longed to be at home, alone, to think. The unlucky utterance of that name had roused a hundred thoughts, a hundred fears, and she was sick at heart, and weary of the show. It was poor fun, after all, keeping a stall. The band played execrably, in a wooden, soulless style. The flowers gave out a heavy perfume that clogged the hot air. The crowd was simply a bore. Where was the satisfaction of cajoling the coin of niggardly purchasers out of their porte-monnaies? Where the pleasure of fascinating boobies, commercial and agricultural? Lady Flavia began to feel as if the whole fancy fair were one great tiresome dream, from which she longed to wake. She cared nothing for the fact, that as her smiles grew rarer, and her merry prattle less continuous, many of her lieges proved recreant, and went off to swell the

throng around Miss Vavasour. She only wished the whole affair well over. That fainting girl, that Miss Ford, had spoiled her triumph.

It was over at last. The ultimate sixpence had been drained from moneyed humanity; and the band had played out its last tune, and had gathered up its music-stands and instruments, brazen and wooden, and marched home to barracks. The carriages drove off—one of them, Lord Mortlake's, carried off the admired of all, Lady Flavia Clare. None of the young men, military and clerical, who stood on the steps, and took off their hats as the aristocratic beauty was whirled away, knew what a heavy heart, and what a busy, plotting brain she carried back with her to her dead father's noble house of Harbledown.

THE MONTH:

SCIENCE AND ARTS.

THAT compressed air can be made to do mechanical work, much in the same way as steam does, is well known to those who have seen in public exhibitions the models of pumps, engines, locomotives, and other machines, all of which are commonly worked by compressed air. Many of us have heard of Ericsson's air-engine, which was to propel great ships from New York to Liverpool, and supersede steam—but failed on the great scale, though it is found very useful, and is extensively employed in America in small engines of from two to four horse-power. Some persons will remember the envelope-making machine described a few years ago, in which, after the line of the folds had been made, and the gum applied by a rapid movement, the flaps were blown down flat into their place by a quick puff of air. It, however, intruded on some then existing patent, and so dropped out of notice. But to all of us the notion of weaving by air will come as something new; and, indeed, it is an application that ranks almost as a new discovery.

It may, however, be asked, what is the advantage of weaving by air, when it is already done by steam to such an extent as to constitute one of the most important branches of our national trade. The answer is, that in weaving by steam there is a great waste of power, besides losses in other ways, that fall upon the factory-owner and the weavers. The shuttle is jerked to and fro by an iron 'picker' and a flexible leathern strap. The picker must be kept well oiled, or it will not work readily; the temperature of the room must be high, to keep the oil fluent, and then the oil is apt to splash about and stain the calico, in which latter case a reduction is made from the weaver's wages. Substitute air for steam, and all this waste of power and attendant losses are completely obviated; and this is what is accomplished by Mr C. W. Harrison, the inventor of this new and ingenious method of weaving by air. He makes no use whatever of the contrivances above mentioned, required in weaving by steam, but drives his shuttle from side to side by small puffs of air: the other parts of the loom would still be moved by steam as usual. The mode in which the air is applied is briefly this: air is forced by a pump into a series of pipes under the floor, which feed all the looms; each loom is connected with one of these pipes by a flexible tube, which admits the compressed air into what is called the shuttle-box; and the needful quantity of air being admitted, at once blows the shuttle to

the opposite side of the loom, whence, by a similar contrivance, it is at once blown back again. This blowing can be carried on at the rate of from two hundred and fifty to two hundred and sixty strokes in a minute, the rate of the ordinary power-loom being one hundred and eighty strokes. Here at once an important advantage is gained in rapidity of production; and it has been calculated that while a power-loom will weave eleven thousand one hundred yards in a year, the pneumatic loom will weave thirteen thousand nine hundred yards; and if the difference be multiplied by five hundred thousand, the number of power-loom in the kingdom, the increase will be found literally prodigious; enough, as stated by a writer in the *Times*, to stretch to the moon and back again more than twenty times.

Besides this, the pneumatic loom can be constructed at less cost than a power-loom, and worked with less difficulty. It does not require a constant quantity of oil, nor a high temperature; and it will be of no little benefit to the factory-hands to get rid of the heat and offensive smell of the oil, and have instead an endless course of puffs of fresh air. Moreover, there will be much less noise, which is in itself an important consideration. Hence, weaving by air seems to have everything in its favour: cheapness, greater profit, and improved health. Whether, with these advantages, it will have a hard struggle to win its way into use, remains to be seen.

A new traction-engine is in use at Chatham dockyard, which is worth a word of notice, inasmuch as it effects an important saving of time and labour in the removal of mere dead-weight. The wheels, as usual, are broad. It carries a crane, and picks up armour-plates, shafts of screw-propellers, and such like, up to a weight of seven tons; transports them, wherever required, at a rate of six miles an hour, and accomplishes as much work in an hour as would occupy a large number of men and horses half a day. To prevent accident, when working among piles of timber and by the side of wooden ships, it is so constructed that sparks cannot escape from the funnel, nor cinders from the fire-box. The question here arises, if all rude heavy labour were done by engines such as this, would the condition of the labourers be elevated by their being allowed to betake themselves to lighter work?

The suggestion which we noticed some months ago, that great economy would be effected if petroleum could be substituted for coal on board steam-ships, is likely to be brought into practice: Captain Selwyn and Mr C. J. Richardson have both given lectures on the use of mineral oils as steam-fuel at the United Service Institution, where, of course, they were listened to by naval men able to judge of the merits of the question. To the objection, that petroleum has dangerous properties, the reply is, that the highly-inflammable spirit can be extracted, and leave the unexplosive oil only for burning.

The Chancellor of the Exchequer made some remarks at Mold a few weeks ago at the close of a lecture which had been delivered on Coal, and stated that Sir William Armstrong's prediction as to the exhaustion of the coal of this country in two hundred years, applied to the coal-fields of Durham and Northumberland only; and that Wales contains coal enough to last a thousand years. After this statement, we cannot expect

that any one will study economy of coal. Mr Gladstone said further, that 'a gentleman at Manchester had informed him that the production of gas was being cheapened in that town at such a rate that it was highly probable that after the lapse of a few years all houses occupied by the labouring part of the population in particular would use no coal at all, but would have all the functions of light, heat, and cooking performed by gas.'

We have heard of a process for producing artificial marble. Geologists tell us that one sort of real marble is nothing but chalk, through which an intensely-heated stream of carbonic acid has passed. The new process consists in heating powdered limestone and chalk in a porcelain vessel, from which atmospheric air is excluded. This seems simple enough; but whether it can be economically applied on the great scale, remains for further experiment.—A method of coating wood with a varnish as hard as stone has been recently introduced in Germany: the ingredients are forty parts of chalk, forty of resin, four of linseed oil, to be melted together in an iron pot. One part of native oxide of copper, and one of sulphuric acid, are then to be added, after which the composition is ready for use. It is applied hot to the wood with a brush, in the same way as paint, and, as before observed, becomes exceedingly hard on drying.

Reserving a notice of the contemplated exploring expedition to the north pole until the plans are more matured, we may mention that important schemes for buildings and public improvements will be brought before the House next session. In anticipation of these, it is satisfactory to know that architecture and building are still making progress; and if the next few years shew the same active rate of advance as, by the Report of the Metropolitan Board of Works, appears to have prevailed during the past few years, London will shew a fairer and grander aspect than it has yet done. The new streets recently opened add as much to convenience of locomotion as to better appearance; and the abolition of the five or six names that have long been in use for one line of thoroughfare, and the numbering of the houses in unbroken order from one end to the other, is a benefit to all concerned, and an application of common-sense in a right way. But there are still many streets in which the same change ought to be made, and why it is not made is a question that calls for speedy answer. We could particularise the names of a dozen off-hand, were this the place to do so. Let the Board look to it. Meanwhile we are glad (and our readers will be the same) to hear that that long-standing nuisance, Middle Row, Holborn, is to be swept away. Such an obstruction to a broad, leading thoroughfare would have been cleared off years ago in Paris or New York. Something, too, is to be done towards easing Park Lane; but the effect will probably be to render that end of Piccadilly more inconvenient for foot-passengers than at present, seeing that there will be two crossings instead of one, perpetually encumbered with cabs and all other vehicles. Another important item in the Report is, that the main-drainage works, excepting the portion that depends on the Thames embankment, will be completed this year. All the open sewers within the metropolitan district will then

be taken in hand, and covered: an operation expected to take four years in the doing. One effect of this praiseworthy step ought to be perceived in improvement of the public health, another will be that pleasant places in the outskirts, and there are many, will be made more enjoyable by the covering up of fetid drains and water-courses. The suburban parks will especially benefit thereby, and not least the two new ones that are to be made; one for the Finsbury district, on the borders of Stoke-Newington; one for the South-eastern district, in the low-lying flats of Rotherhithe, where breathing space is much wanted by a laborious population.

The Thames embankment between Westminster and Charing Cross bridges already makes a considerable display, and on looking at its great breadth, it is easy to anticipate the advantage it will afford for traffic, especially when the new street from Blackfriars to the Mansion House shall be complete and connected with it. Besides the roadway and footways on its surface, it is to have underneath a subway, such as we have before described, a railway, and the great low-level sewer. We hope that the whole will be constructed and finished in the way that an imperial work demands in these days of abundance of money, and unlimited engineering resources. A beginning is also to be made with the embankment on the Surrey side, namely, from Westminster Bridge to Vauxhall. From all this we gather that, apart from questions of utility, mere sightseers will have enough to look at for years to come.

In the last advices from Senegal, that country is reported as infested by locusts in numbers larger than ever, and a fact is mentioned which enables readers at a distance to judge of the prodigious swarms. A French steamer, with the governor on board, was lying in the river, when a swarm of locusts passed flying inland, in such inconceivable numbers as completely to hide the shore from the company in the vessel. It was, in fact, a dense cloud of locusts, forty-five miles long, which occupied from sunrise to sunset in passing. As an illustration of the proverb concerning an ill-wind, we read further, that while this invasion of locusts filled the black farmers with despair, the Moors, who are not agriculturists, were in high spirits, as they kill and preserve large quantities of the insects for food.

It appears that the often-talked-of schemes for bringing to England supplies of the beef which is wasted in South America by thousands of tons, are likely to end in practical measures for accomplishing the object. For some months past, this beef has been sold in a few of our large towns in the north at threepence a pound; and though it has a somewhat tainted odour, it can be rendered palatable and nutritious by proper cooking; and now that a demand has sprung up, other modes of preparing the beef for export will doubtless be discovered. In the countries around Buenos Ayres, four million cattle are killed every year for their hides. Each animal yields about a hundred and fifty pounds of dried beef; hence the enormous quantity wasted may be easily calculated. There are mouths enough in Great Britain to consume a liberal share of it; and if the merchants of South America will only take care to prepare and send here a wholesome article, they may reckon on

such a demand as will make them declare some day that Beef is king; at the same time, the health of our working-classes would be much improved by a fair allowance of meat.

FIRST SLEEP.

FAIRER than aught in nature,
Fairer than aught we see,
O infant, softly sleeping,
Thy fair face shews to me.

It is not the rose-like bloom
That on thy young cheek lies;
It is not the liquid azure
Of those lid-shrouded eyes;

It is not the paly gold
Of thy soft silken hair—
Not these that make thee fairest
Of all earth holds most fair:

But it is the living soul
Within thy frail form bound,
Which makes me kneel beside thee,
As if on holy ground.

Fresh from the hand that gave it,
It hath no taint of sin;
Like some yet unsealed fountain,
It rests thy heart within.

As yet no breath hath stirred it;
It lies in darkness dreaming,
And we but faintly trace it
Over thy young face gleaming.

But soon the light must reach it,
And passion o'er it sweeping,
Will wake it up to action,
To smiling and to weeping;

Will bear it to the battle
Which one and all must fight,
However faint and weary,
From early dawn till night.

Oh, when the day is over,
And life is dimly burning
In the half-reluctant spirit—
To Him who gave returning—

May peace, in that dark moment
When death's cold hands caress thee,
Such peace as rocks thy cradle,
Return once more to bless thee.

And may that last long slumber,
In which kind Nature binds thee,
Be tranquil as this first one,
In which, fair child, she finds thee.

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